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EDITED BY
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S. V. B. NOEL, *Publisher and Printer.*

WESTERN FARMER AND GARDENER.

INDIANAPOLIS, TUESDAY, DECEMBER 16, 1846.

☞ The title page and Index will be published soon, and sent to all our subscribers.

TAKE NOTICE!!

☞ NEW SUBSCRIBERS.—When we began our second volume, many subscribers of the first, expressed surprise that it was not sent to them, as they, of *ocurse*, meant to take it, and really hoped that their credit was good for the price charged. To prevent the recurrence of such surprise. we announce to all whom it may concern, that we open *new books* with every new volume. The Farmer and Gardener, is sent to all who forward their names and money. It is sent to no others, unless a special arrangement has been made to that effect. We have several subscribers who have paid for two or three years in advance. Their names will, of course, be transferred to our new list without trouble to them.

Now, there will be hundreds who will read this and think within themselves, "well, as soon as I get time I'll pick up three or four names and send to renew my subscription." The editor begs leave to bid good-bye to such; as in nine cases out of ten, they will neglect to do what they only *mean to do.* If the man, on reading this, cries out, "wife, bring me that gourd that has my money in it," and unties the little parcel, lays out *his own* subscription price, writes the letter, and says; "now before the sun goes down I will see Mr. A. and B. and C. and mail this letter *to-morrow*," and *then keeps his word*—that's the man that an editor delights to honor. Oh sir, may you live a thousand years, and have children in number as the stars of heaven, and each of them become a subscriber to the Farmer and Gardener!

It is perhaps expected that we shall make tempting promises for the next volume, and we mean to do it. But for several reasons we defer it till the *end* of the next volume, as then we shall be certain of fulfilling all that is promised. Indeed the best promises are not those which respect the future, but which describe the past; and next December we mean to make large professions of what we shall do in the year 1847.

HUGE APPLES.—We do not remember in any former years, to have noticed accounts of such truly ponderous apples as have appeared during this past summer. Dr. Plummer, in addition to those recorded in former numbers of the Farmer and Gardener, gives accounts of Gloria Mundi apples, weighing, the one twenty-eight and the other thirty-two ounces. Even these monsters must yield

to three reported in the Ohio Cultivator of Nov. 1, weighing each thirty-four ounces. *Pound* pippins which used to wear their name as if in proud defiance of little apples, must hang their heads and regard their title as a pretty pet diminutive.

Missing Numbers. — Although the Farmer and Gardener has been mailed from this office as soon as published, we have within a few months had very many complaints of missing numbers. There is certainly fault in some other quarter than in our office. There seems to be a wide-spread dissatisfaction with the performances of our mails.

We will, as far as possible, supply all missing numbers, upon *post-paid* applications.

RETROSPECTION.

With this number closes the second volume of the Western Farmer and Gardener. The labor of another year has passed beyond our reach. We can alter nothing, and the past is of no use to us except to be a lesson for the future. The soil that the plow ripped up, in the spring, has yielded its harvest, its work is closed, its fruits garnered. The tree whose boughs grew green when the singing of birds proclaimed that spring was come, has ripened its fruit, perfected its growth, its store is gathered, and its leaves are lying beneath it, and slowry returning to the earth from which they sprang. Only here and there, on a bright morning, do we see one of these birds which, a few months ago, builded their nest, watched their young, or taught the nestlings how to fly — young and old, with their grace of motion and sweet notes, are gone to a fairer clime. These changes one cannot help noticing; and no meditative mind can avoid many thoughts which flow out of them. Where are the harvests garnered which grew in the soil of the human heart? What thoughts and generous purposes have been ripened and stored up like fruit, and what ones have fallen and perished like leaves? Our vernal orchards never stood, within our remembrance, in such a glory of bloom; yet when the fruit should have set, most of the blossoms proved vain. And how many good purposes and fair resolutions have so perished within us? Have we, like the trees which we love and care for, made growth, of root and branch? Every thing in nature has gradually assumed a preparation for winter. Those frosts and that ice which would have sent such mischief upon the leaves of summer, now lie, without harm, upon orchard and garden. Are we ripe and ready, too, for such a winter as adversity brings upon men?

COMMUNICATIONS.

FALL OF 1846 IN WAYNE COUNTY.

Ninth month. On the 2d, I observed the corn-blades were becoming brown; and some corn cut and stacked. All the corn that I have examined this season has been remarkably perfect; almost every cob being covered to the very tip. I have noticed more tall corn than usual, for this county: one stalk measured 14 2-3 feet from the ground to the top of the tassel; and 5¼ inches around a lower joint; other stalks might have been found to exceed this in height. Third; clingstone peaches from Hancock county and elsewhere, sold here at 75 cents a bushel. Fifth. Isabella and Catawba grapes ripe. Unusual quantities of tobacco raised here this season. Seventh. Books, clothes, &c. very moldy, in consequence of the humidity of this and the preceeding month. At 7 o'clock A. M. 64° which, with a little breeze made the air very agreeably cool. Twelfth. Brazillian or Mexican Vine (Basella tuberosa) beginning to bloom.* — Thermometer late in the evening 80°. Fifteenth. At 10 o'clock P. M. 64°; 16th at 1 o'clock A. M. 60°; and the same at 5¼ o'clock A. M. Peaches from Randolph county fifty cents a bushel. Most of the peaches this year, insipid: it will be inferred of course, that none have been raised in this county. Seventeenth. Strong wind: 19th, 55° at 6 o'clock A. M. 22d; 54° at 3 to 7 o'clock A. M. 25th. Here and there a sugar tree, red maple, lin, walnut, hop-hornbeam (Carpinus americanus) cherry, peach, and plum trees casting their leaves. Currant leaves mostly fallen. Much complaint of apples rotting. Bellefleur and other winter and fall apples selling at twelve to twenty cents a bushel. Sweet potato crop good; 37½ cents a bushel; corn fields universally brown. 27th; 50° at 6 o'clock A. M. 28th; 46° at 5¼ o'clock A. M. 29th; 48° at 6¼ o'clock A. M. A few sycamores and hawthorns shedding their leaves scantily. Potato-worm (Sphinx quinquemaculatus) eating tomato leaves; entirely consuming the foliage of some vines. (The potato and tomato are of the same genus of plants.) Iron-weed (Vernonia prealta) everywhere dead. Broom-corn still green. The great profusion of black walnuts, has brought all manner of hand-carts, wagons &c. into requisition among the boys, who are coming home daily, laden with the nuts.

The fore part of this month, like the greater part of the last, was rendered very oppressive by a calm, humid atmosphere, with a temperature seldom much lowered during the night. A sudden and refreshing change took place on the 14th, which was breezy, and toward evening, cool. Rain 3.21 inches. Average noon heat 76°; highest, 84°; lowest, 66°.

TENTH MONTH.

Third, 44° at six o'clock A. M. Mexican vine and other tender plants not affected by the cold. Wheat 45 cents. Millers say the grain does not average more than fifty-four pounds to the bushel, this season; last year I think the weight was sixty-two pounds. If the reader supposes the weather

* Last fall (1845) the decaying flowers of this plant were exceedingly offensive: grown in the same locality this season, nothing of the kind was perceived.

influences the weight of the grain, he may compare the two seasons, as reported to this paper, from the time of sowing to that of cutting. 5th, 44° at 6 o'clock A. M. Ash shedding their leaves. Woods just beginning to be discolored. Locust leaves (Robinia) beginning to fall. 10th, elms shedding their foliage. 13th, north wind all day, bringing the mercury down to 55° at noon. Grapes still hanging in clusters on some vines (Isabella.) Hay four dollars a ton of 2000 pounds. 16th. A strong wind to-day; thermometer higher by twenty degrees than for the last three days. Some apple-trees, as Maiden's blush, blooming; and beans with new blossoms and pods half grown. 17th. Some fine hail fell toward noon, with rain; and afterward for nearly an hour, *snow*, contrasting strangely with the surrounding verdure. The mercury fell at noon to 44°, thirty degrees lower than at yesterday noon! I find no similar instance of so sudden a change on my records of this month; (and it is remarkable that at Portsmouth, N. H., a similar change occurred the day after; the noon temperature being 72° and 40°.) 18th, ground stiffened with cold frost and ice continued till nine o'clock. This is the first this season worthy of note; the only one which has affected the tenderest vegetation. 19th, 30° at 6 o'clock A. M. 24th. Frosty nights but pleasant days, the past week. The frost of 18th has not so affected the verdure, nor foliage, as to cause it to fall; for the woods are quite summer-like, tho' tinged autumnally here and there. 26th; pears blooming; and my peach trees, in the country, with flower-buds ready to burst; full-bloom blossoms, and *fruit* half inch long on the same tree! Eight or a dozen trees thus in flower, in my orchard.* 27th. Pumpkins two dollars for a two-horse wagon load. 29th. Many sugar-trees baren of leaves. 30th. A large flock of crows flying high and going south-west. Rain three inches. Average noon temperature 69°, highest 77°, and lowest 42°. Our plum, pear, quince, apple, and cherry trees, were all fruitful.

ELEVENTH MONTH.

Ninth; woods universally brown; leaves falling in showers by every breeze; hazy, balmy weather. 19th. Snow, whitening the ground early this morning (4 o'clock) and continued till 2 o'clock P. M. 21st. Remarkably protracted fine fall weather; no frost for nearly four weeks past; but to-day the thermometer stood at 30° at 7 o'clock A. M. 22d. Peach blossoms full blown, and many still expanding. I saw also to-day numerous blossoms on the Malva crispa, blended with ripened seed. 26th. 18° at 7 o'clock A. M. 28th. Fleecy clouds rapidly flying to the north-east during the night. 25th. Vegetation seems determined to bloom to the latest period: to-day I saw the tri-colored violet (viola tricolor,) phlox paniculata, and some roses in bloom; all in exposed situations. 26th. Three inches of snow, which did not entirely disappear till the thirtieth. Rain 3 4-5 inches. Average noon temperature 49°; highest, 68°, lowest, 22°.

J. T. P.

* This second blooming in the season appears to have been very extensive. A Maryland paper states that "fruit trees in St. Marys county and in many other parts of the country, are in bloom for the second time this season;" and a correspondent under date of this month writes: "I noticed on the Sciota (Ohio) that the apples had nearly all fallen, and were very rotten. The rot begins with a small puncture, and rapidly spreads over the whole apple. Cherry and plum trees bore a full crop of fruit, which ripened; and was followed by the usual fall of the leaf. The trees are now putting forth new foliage; and some of the trees are as full of blossoms as is common to see them in the opening of spring."

ANNUAL CROPS ON FRUIT TREES.

Rev. H. W. Beecher—*Sir*:—The Theory of Horticulture opens to the intelligent practical operator, a field of such unbounded extent, so liberally strewed with its delicacies, that the contemplative mind never satiates, but at every turn some new flower or fruit presents itself for its acceptance. Such, sir, are the rewards of those who enter this field with becoming industry. One of these beautiful subjects is presented by your correspondent, "Y.," in your last number, (November 15,) on the subject of "Annual succession of crops in fruit trees." He has taken hold of the truth, but not so rightfully applied it. He supposes that the "effect of trees exhausting their energies by producing an extra crop of fruit in one year, render them feeble at the commencement of the next year, and thus they are badly prepared to resist the influence of the cold and frosts of spring, which destroys their weak progeny." It is quite probable that to some extent the energies of the tree are so enfeebled by an over-crop as to make it more susceptible of injury by spring frosts. It is also a well established fact that the *vital energies* of a tree are materially *lessened*, and an *extinction* of *life* much hastened, by habitual *over-bearing*.—This should be guarded against by reducing the quantity of fruit on the tree, to what it can with safety perfect. For this, no particular instructions can be given, but must be left to the good judgement of the operator; all depending on the health and vigor of the tree.

To return, however, to the "Annual succession of crops in fruit trees." It must be borne in mind that some sorts of fruit trees, such as the peach, almond, nectarine, &c., bear their fruit on the new, or last year's wood, along the sides of which the embryo or blossom buds are formed for the next year's fruiting, during the progress of its growth. In all such sorts, unless destroyed by frosts or other causes, there will be as certain an annual crop of fruit, as that there has been a previous growth of wood. It is, however, different with the apple, pear, quince, &c. These bear their fruit on what are termed *fruit spurs*. These spurs are two or more years in a process of forming and perfection for the office for which they are designed, on the end of which the embryo in the blossom bud and finally the fruit is formed. It must also be borne in mind, that the embryo is formed in the blossom bud on the end of these spurs the summer previous to the fruiting. If, then, the tree can only bear fruit on these spurs, and all are occupied in the process of perfecting fruit, there can be no room for the forming of the embryo for the next year's fruiting, the natural result is NO FRUIT, let the vigor of the tree be what it may; and it is not depending, for its *barrenness*, on frost or any other *cause*. Nature does, however, to a limited extent, aid in the good work of producing an annual crop

of fruit, partly by adding (as the tree grows in size) annually to the stock of fruit spurs, and partly by the effects of frost on a portion of the young fruit, causing it to drop from the tree, thus leaving the functions of a portion of these spurs directed to the forming of new embryo. But the principal part of the work is left to INTELLIGENT MAN. *How* the desirable end of a uniform annual crop of fruit is to be attained, there will of course be a difference of opinion. Some would effect it by pruning, others by supplying the roots with the proper nourishment; but this will only in part accomplish the end. The most reliance must be on thinning out the fruit soon after it is set in the spring. If this is done with care, it will, to a great extent, produce the desired object, and very much improve the quality of the remaining fruit, in size, flavor, and beauty.

Now, as the tree cannot bear fruit without these spurs, it will be perceived that too much care cannot be taken in the removal of extra fruit. This never should be done by beating the branches or violently shaking the tree, for in either case the spurs are sure to suffer more or less. The better way is to take it off by hand with a pair of shears or nippers, cutting the stem of the fruit, to avoid injury to the end of the spur. Whatever there may remain of the stem on the spur will soon separate and drop, leaving it perfectly unhurt. I do not doubt but that with proper judgment and industry thus applied, a uniform annual crop of fruit may be secured, provided it is not destroyed by other causes. It may, however, be questioned if this can be done with profit in a general culture; but it certainly is worthy the attention of amateurs.

Respectfully yours,

SPRING GARDEN, near Cincinnati, Dec. 8. } A. H. ERNST.

SELECTIONS.

CULTURE OF BARLEY.

CORTLAND VILLAGE, N. Y., Sept. 26, 1846.

Dear Sir—I employ my first leisure in answering your inquiries on the subject of barley and its cultivation.

1. *Varieties.*—Barley (*hordeum distichum*) is of two general varieties, known as winter and spring barley. The former is not cultivated in this State, that I am aware of. It is said to be easily winter-killed; but on lands which are kept constantly covered with snow until the beginning of warm weather, or on those which are not subject to freezing and thawing in winter and spring, it is better and produces heavier grain than the spring variety. It can be harvested in time for a second crop of spring barley, in favorable situations.

Spring barley is subdivided into the Siberian, skinless, sprat, chevalier, etc.; but the two varieties most commonly known and cultivated are the "six-rowed" and the "two-rowed." The six-rowed has three seeds united at the base, at each joint of the *rachis*, on each side alternately; the two-rowed has but one row of seeds on each side of the *rachis*. It puts forth three flowers on a side, at each joint, like the preceding, but the outside ones are barren. The "four-rowed" is but a deviation from the six-rowed.

There is but little difference in the yield of the six and the two-rowed. The former is about a week the earliest, and, for reasons which I am unacquainted with, usually is quoted two or three cents higher per bushel in the New York market† Both bear the same price in the country markets: if there is any difference, the two-owed is preferred, it being the largest and plumpest grain. No difference is perceptible in the varieties as food for stock. The two-rowed is much the most generally cultivated in this region.

2. *Time of Sowing.*—As early in the season as the ground can be got into proper condition, is with this, as with all the other cereal grains, the best time for sowing. The early crops are almost invariably the best. Barley, however, requires that the ground be in a dry, mellow condition at the time of sowing. It will do to sow it late—as late as oats—with no greater depreciation in the crop than follows the late sowing of the latter. It is customary with our farmers to get in their spring wheat first, barbey second, and oats third.

3. *Quantity of Seed Sown.*—Full three bushels are required to the aker. Of the two-rowed, the grains being larger, I sow at least three bushels and a peck.

4. *Kind of Land adapted to it.*—Dry loamy or gravelly soils; but it will flourish in any of our loose soils which are sufficiently rich and dry. It fails on stiff clays, and on all wet, cold lands.

5. *Preparation of the Soil.*—It requires about the same preparation, by plowing and harrowing, as spring wheat. It requires land, too, as rich as prime wheat land. On poor and worn-out soils, oats are more profitable. It has one peculiarity which distinguishes it from all the other cereal grains: it will yield well, and the ears will fill, on very highly manured lands, on which the others would run to straw, fall down, and entirely fail to fill. Barley, under such circumstances, will fall down, like the other grains, but the ears will fill when it is lying nearly flat on the ground. I always have it, therefore, follow highly manured hoed crops, in my rotation. I frequently apply sixty two-horse loads of manure to the aker for turneps. If I follow them with wheat, it always fails; and it would require no experiment to demonstrate the folly of sowing oats under such circumstances. Barley will generally fall down, but I have raised sixty, and even more, bushels per aker on soils in that condition. This year I had a small patch of it mixed with flax, on excessively manured land adjoining a barn. The growth was exceedingly rank, and a whirling wind threw it down, and twisted and tangled it in a manner I never before saw equalled, about the time the grain began to set. While this went on ripening the roots put out a new set of shoots, which stood up. At harvesting, the first heads were full of fine plump grain, and the barley, though much smaller, was sufficiently advanced to cure, on the second growth.

6. *As a covering for grass.*—It is generally preferred, by those who cultivate it, to any other crop, for this purpose. I have never had my grass seeds fail with it.

7. *Liability to Injury.*—It is less liable to injury than any grain crop with which I am acquainted.

†Some experienced manufacturers say, that there is perhaps, no intrinsic difference in quality, but that the two-rowed requires more time and care to extract thoroughly its qualities.—*Ed. Farm. Lib.*

Its tendency to fill, when down, has been alluded to. No insect enemies have yet attacked it, so far as I am aware. I have never known it to rust, though oats are very prone to on my lands. It has a remarkable power of resisting drouth. Its greatest enemy is continued rainy, warm weather, at the time of harvesting. It sprouts readily after it is cut, which seriously injures the grain. I have known crops of it injured in this way, though I never had one of my own thus injured, nor do I think it very necessary.

8. *Difficulty in the process of Curing.*—It cures with as much facility as any other grain, and is cut with as little labor, when taken in season. It should be cut when the kernels are in a doughy state, and while the straw is somewhat greenish, and stands erect. Left until dead-ripe, the straw "crinkles," and is cut with the cradle, raked and bound, exposed in shocks (where two rows are set up loosely together, without any cap) for a day or two, and then carted in. If the straw is green, it is generally left a day or two in swath, before binding; but care must be taken that it does not cure too much, on account of shelling. If the crop is down or "lodged," it is cut with a scythe, suffered to lay on the ground a day or two, raked into swaths and cocked like hay, or, if already dry enough, carted in. It may be raked with a horse rake, if not too dry. This is a cheap way of harvesting barley, but it is liable to the objection that the unbound straw takes up an entirely disproportionate amount of barn-room. It is also difficult to stack it unbound, the straw being short and singularly "slippery."

9. *Its value for Feeding Stock.*—According to the careful experiments of Thaer, the comparative values of wheat, barley and oats, in feeding cattle, are represented by 47, 32 and 24, the *measure* being the same. It is considered by our farmers, by measure, to be about half way between oats and corn, in its nutritious properties—perhaps rather nearer the corn than would be indicated by such middle point.

I have fed it to all kinds of farm stock, and like it for all, excepting carriage-horses. For these, oats are preferable. But for draught-horses, oxen, cows, young cattle, sheep and swine, it forms an excellent feed. I prefer it to corn for draught-horses, and also for other kinds of stock, excepting swine, where the object is not directly to fatten for slaughter. I prefer it, because I consider it less stimulating and less cloying. For fattening swine, nothing can exceed corn; but barley is beginning to be used quite as generally for that purpose in this region. Very fat hogs eat it better toward the last than they do corn. No difference can be detected in the pork made from the two grains.*

It will be understood that the average product above stated includes every variety of land and cultivation. My own crops of barley have averaged not less than thirty-eight or forty bushels per aker for ten years, and I have raised sixty-five bushels per aker in some cases.

11. *Preparation.*—It should be ground for all kinds of stock. Some soak it soft and feed it unground, but it is poor economy The meal is fed dry to horses and sheep; mixed with water or milk, and fermented until it acquires a sweet taste, to swine; and either dry or cooked, to cattle.

12. *Miscellaneous Remarks.*—Having replied to your questions *seriatim*, I will, in pursuance of your request, make such other suggestions as occur to me, which I think would prove useful to those unacquainted with the nature and culture of barley.

Climate.—Barley is cultivated and comes to perfection in a greater variety of climates than any other grain.

Mixing with other Crops.—The two-rowed barley is frequently sowed mixed with oats, and in some instances with flax. I have tried both. They do very well together, but on the whole I prefer separate sowing.

Effect of Barley on Soils.—Barley is generally considered a less exhausting crop than oats. Such is my impression, but I am not able to adduce any decisive proof.

Barley Straw.—If the barley is cut quite green, and the straw is cured so that a considerable portion of it retains this color, it is eaten by cattle, in cold weather, almost as readily as hay. It is softer than the other straws, and is much more readily eaten by all kinds of stock, where the process of cutting is not resorted to. I usually cut my oat straw for my horses; I feed the barley straw uncut to my cows. For two winters, it has been my custom to give the latter two feeds of barley a day and one lightish one of hay, with a feed of from six to eight quarts of turneps. They will do as well on this as on a full supply of hay, and it is much cheaper. I have also fed barley straw without hay, giving turneps, or a little barley meal. Either way is cheaper than wintering on hay exclusively, and with proper management will do as well.

Barley in the Rotation of Crops.—It is customary among the best farmers in this region, to take but three grain or root crops before seeding down. The first is generally a hoed crop, on good soils, viz: corn, potatoes, and turneps. The first crop receives all the manure. Where the manure is not applied very plentifully, wheat is often the second crop, and barley or oats the third, with grass seeds. But it is common, with many (who make large quantities of manure,) to manure their turneps, potatoes, and as much of their corn as they can, very bountifully—say from forty to sixty loads per aker. In this case barley is the second crop, followed by grass and wheat seeds. On ordinary lands I have sometimes sown oats on the inverted sward without manure; followed them with hoed crops, well manured; and then seeded down with barley. This leaves the land in capital condition for good, luxuriant meadows. On some lands, spring wheat would be more profitable than oats as a first crop in this series. But whatever the order of my rotation, barley invariably constitutes one of its crops. A very extensive and successful farmer here takes but two crops before seeding down, viz: roots or corn highly manured, then barley with grass seeds. He prefers to purchase his oats, and raises barely enough wheat for his own use.

Advantage of Barley over Indian Corn.—On prime corn lands, and where force enough can be obtained to manage it, no crop will yield a better profit

*[We omit several tables, as they respect the eastern rather than the western market.]

Ed. Far. and Gard.

than corn; indeed, no one, perhaps, equals it. But it requires the choicest land, great quantities of manure, a great amount of labor, and a favorable climate. On no ordinary farm can all the arable land be kept in a suitable condition for corn; on many farms the requisite amount of manure cannot be had. It is difficult, and would be here impossible to obtain sufficient labor to manage the crop, if it became anything like a general substitute for the other grains. And finally, on many of our hill lands corn is always a precarious crop, even with the best management, by reason of the shortness of time between the spring and autumn frosts.

When any of these considerations prevent the rearing of corn, I regard barley as the best substitute. It has these advantages over the former: it does not absolutely require so rich land as corn, though as I have said, it will yield a profitable return on the very richest land. Its cultivation requires no more labor than the cultivation of wheat. It will ripen in the shortest season and on the frostiest lands. Its earliest ripening gives it an advantage over corn under any circumstances, for summer and fall feed to cattle and swine. Where pork is fattened to any considerable extent, this is an important consideration. Pork is made nearly a half cheaper in warm than in cold weather; and to make its production profitable, swine should be at least one-third fatted by the time corn is ripe.

Threshing Barley. — This may be done by machines, by the flail, or by horses. It threshes more easily than wheat or oats. Much is *written* about "hummeling," or breaking off the awns or beards from the grain. I thresh out the grain as I would oats, and that is all. It is then fit to be sent to the mill to be ground into meal for stock.

Storing Barley.—I put it into bins holding, say one hundred bushels each, in a granary; and I never have had occasion to move it or shovel it over, and it never has received any injury.

You will please excuse me for the desultoriness of these rapid remarks—and, believe me, sir,

Your friend and obedient servant,

HENRY S. RANDALL.

J. S. Skinner, Esq. *Farmers' Library.*

LUNAR INFLUENCES.

On a former occasion, I examined the question respecting the supposed influence of the moon upon the weather, and demonstrated that so far as actual observation has hitherto afforded grounds for reasoning, there is no discoverable correspondence between the lunar changes and the vicissitudes of rain and drought which can justify or in any degree countenance the popular belief, so generally entertained, as to dependance of change of weather upon the changes of the moon.

But meteorological phenomena are not the only effects imputed to our satellite; that body, like comets, is made responsible for a vast variety of interferences with organized nature. The circulation of the juices of vegetables, the qualities of grain, the fate of the vintage, are all laid to its account; and timber must be felled, the harvest cut down and gathered in, and the juice of the grape expressed, at times and under circumstances regulated by the aspects of the moon, if excellence be hoped for in these products of the soil.

According to the popular belief, our satellite also presides over human maladies; and the phenomena of the sick chamber are governed by the lunar phases; nay, the very marrow of our bones, and the weight of our bodies, suffer increase or diminution by its influence. Nor is its imputed power confined to physical or organic effects; it notoriously governs mental derangement.

If these opinions respecting lunar influences were limited to particular countries, they would be less entitled to serious consideration; but it is a curious fact that many of them prevail and have prevailed in quarters of the earth, so distant and unconnected, that it is difficult to imagine the same error to have proceeded from the same source. At all events, the extent of their prevalence alone renders them a fit subject for serious investigation; and I propose at present to lay before you some of the principal facts and arguments bearing on these points, for the collection of which we are mainly indebted to the industry and research of M. Arago.

A large volume would be necessary to analyse all the popular opinions which refer to the supposed lunar influences. We shall confine ourselves, therefore, to the principal of them, and shortly examine how far they can be reconciled with the established principles of astronomy and physics.

The Red Moon.—It is believed generally, especially in the neighborhood of Paris, that in certain months of the year, the moon exerts a great influence upon the phenomena of vegetation. Gardeners give the name of *Red Moon* to that which is full between the middle of April and the close of May. According to them, the light of the moon, at that season, exercises an injurious influence upon the young shoots of plants. They say that when the sky is clear, the leaves and buds, exposed to the lunar light, redden and are killed as if by frost, at a time when the thermometer, exposed to the atmosphere, stands at many degrees above the freezing point. They say, also, that if a clouded sky intercepts the moon's light, it prevents these injurious consequences to the plants, although the circumstances of temperature are the same in both cases.

Any person who is acquainted with the beautiful theory of dew, which we owe to Dr. Wells, will find no difficulty in accounting for these effects erroneously imputed to the moon. If the heavens be clear and unclouded, all substances on the surface of the earth, which are strong and powerful radiators of heat, lose temperature by radiation, while the unclouded sky returns no heat to them to restore what they have lost. Such bodies, therefore, under these circumstances, become colder than the surrounding air, and may even, if they be liquid, be frozen. Ice, in fact, is produced, in warm climates, by similar means. But if the firmament be enveloped in clouds, the clouds having the quality of radiating heat, will restore by their radiation; the temperature, therefore, of such bodies will be maintained at a point equal to that of the air surrounding them.

Now the leaves and flowers of plants are strong and powerful radiators of heat. When the sky is clear, they therefore lose temperature, and may be frozen. If, on the other hand, the sky be clouded, their temperature is maintained for the reasons above stated.

The moon, therefore, has no connection what-

ever with this effect; and it is certain that plants would suffer, under the same circumstances, whether the moon is above or below the horozon. It equally is quite true that, if the moon be above the horizon, the plants cannot suffer unless it be visible, because a *clear sky* is indispensible, as much to the production of the injury to the plants as to the visibility of the moon; and, on the other hand, the same clouds which veil the moon and intercept her light, give back to the plants that warmth which prevents the injury here adverted to. The popular opinion is therefore right as to the *effect*, but wrong as to the *cause;* and its error will be at once discovered by showing that, on a clear night, when the moon is new, and, therefore, not visible, the plants may nevertheless suffer.

Time for Felling Timber.—There is an opinion generally entertained that timber should be felled only during the decline of the moon; for if it be cut down during its increase, it will not be of a good or durable quality. This impression prevails in various countries. It is acted upon in England, and is made the ground of legislation in France. The forest laws of the latter country interdict the cutting of timber during the increase of the moon. M. Auguste de Saint Hilaire states, that he found the same opinion prevalent in Brazil. Signor Francisco Pinto, an eminent agriculturist in the province of Espirito Santo, assured him as the result of his experience, that the wood that was not felled at the full of the moon was immediately attacked by worms and very soon rotted.

In the extensive forest of Germany, the same opinion is entertained and acted upon with the most undoubting confidence in its truth. Sauer, a superintendent of some of these districts, assigns what he believes to be its physical cause. According to him, the increase of the moon causes the sap to ascend in the timber, and, on the other hand, the decrease of the moon causes its descent. If the timber, therefore, be cut during the decrease of the moon, it will be cut in a dry state, the sap having retired, and the wood, therefore, will be compact, solid, and durable; but if it be cut during the increase of the moon, it will be felled with the sap in it, and will therefore be more spongy, more easily attacked by worms, more difficult to season, and more readily split and warped by changes of temperature.

Admitting for a moment the reality of this supposition concerning the motion of the sap, it would follow that the proper time for felling the timber would be the new moon, that being the epoch at which the descent of the sap would have been made, and the ascent not yet commenced. But can there be imagined, in the whole range of natural science, a physical relation more extraordinary and unaccountable than this supposed correspondence between the movement of the sap and the phases of the moon? Assuredly theory affords not the slightest countenance to such a supposition. But let us enquire as to the fact whether it be really the case that the quality of timber depends upon the state of the moon at the time it is felled.

M. Duhamel du Monceau, a celebrated French agriculturist, has made direct and positive experiments, for the purpose of testing this question, and has clearly and conclusively shown that the qualities of timber felled in different parts of the lunar month are the same. M. Duhamel felled a great many trees of the same age, growing from the same soil, and exposed to the same aspect, and never found any difference in the quality of the timber when he compared those which were felled in the decline of the moon with those which were felled during its increase; in general they have afforded timber of the same quality. He adds, however, that by a circumstance, which was doubtless fortuitous, a slight difference was manifested in favor of timber which had been felled between the new and full moon—contrary to popular opinion.

Supposed Lunar Influence on Vegetables.—It is an aphorism, received by all gardeners and agriculturists in Europe, that vegetables, plants, and trees, which are expected to flourish and grow with vigor, should be planted, grafted, and pruned, during the increase of the moon. This opinion is altogether erroneous. The increase or decrease of the moon has no appreciable influence on the phenomena of vegetation; and the experiments and observations of several French agriculturists, and especially of M. Duhamel du Monceau, (already alluded to,) have clearly established this.

Montainari has attempted, like M Sauer, to assign the physical cause for this imaginary effect. During the day, he says, the solar heat augments the quantity of sap which circulates in plants, by increasing the magnitude of the tube through which the sap moves, while the cold of the night produces the opposite effect, by contracting these tubes. Now, at the moment of sunset, if the moon be increasing, it will be above the horizon, and the warmth of its light would prolong the circulation of the sap; but, during its decline, it will not rise for a considerable time after sunset, and the plants will be suddenly exposed to the unmitigated cold of the night, by which a sudden contraction of leaves and tubes will be produced, and the circulation of the sap as suddenly obstructed.

If we admit the lunar rays to possess any sensible calorific power, this reasoning might be allowed; but it will have very little force when it is considered that the extreme change of temperature which can be produced by the lunar light, does not amount to the thousandth part of a degree of the thermometer. It is a curious circumstance that this erroneous prejudice prevails on the American continent. M. Auguste de Saint Hiliare states that, in Brazil, cultivators plant during the decline of the moon all vegetables whose roots are used as food, and, on the contrary, they plant during the increasing moon the sugar-cane, maize, rice, beans, &c., and those which bear the food upon their stocks and branches. Experiments, however, were made and reported by M. de Chanvalon, at Martinique, on vegetables of both kinds, planted at different times in the lunar month, and no appreciable difference in their qualities was discovered.

There are some traces of a principle in the rule adopted by the South American agronomes, according to which they treat the two classes of plants, distinguished by the production of fruit on their roots or on their branches, differently; but there are none in the European aphorisms. The directions of Pliny are still more specific; he prescribes the time of the full moon for sowing beans, and that of the new moon for lentils. 'Truly,' says M. Arago, 'we have need of a robust faith to admit, without proof, that the moon, at the distance of 240,000 miles, shall, in one position, act advantageously upon the vegetation of beans, and

that in the opposite position, and at the same distance, she shall be propitious to lentils.'

Supposed Lunar Influence on Grain. — Pliny states, that if we would collect grain for the purpose of immediate sale, we should do so at the full of the moon, because, during the moon's increase, the grain augments remarkably in magnitude; but if we would collect the grain to preserve it, we should choose the new moon, or the decline of the moon.

So far as it is consistent with observation that more rain falls during the increase of the moon than during its decline, there may be some reason for this maxim; but Pliny, or those from whom we receive the maxim, can barely have credit for grounds so rational: besides which, the difference in the quantity of rain which falls during the two periods is too insignificant to produce the effects here adverted to.

Supposed Lunar Influence on Wine-making.—It is a maxim of vine-growers, that wine which has been made in two moons is never of a good quality, and cannot be clear. Toaldo, the celebrated Italian meteorologist, whose mind appears to have been predisposed for the reception of lunar prejudice, attempts to justify this maxim. 'The vinous fermentation,' he says, 'can only be carried on in two moons when it begins immediately before the new moon; and consequently, that this being a time when the enlightened side of the moon is turned for the most part from the earth, our atmosphere is deprived of the heat of the lunar rays, that, therefore, the temperature of the air is lowered, and the fermentation is less active.'

To this we need only answer, that the moon's rays do not effect the temperature of the air to the extent of one thousandth part of a degree of the thermometer, and that the difference of temperatures of any two neighboring places, in which the process of making the wine of the same soil and vintage might be conducted, must be a thousand times greater at any given moment of time, and yet no one ever imagines that such a circumstance can effect the quality of the wine.

It is a maxim of Italian wine merchants, that wine ought never to be transferred from one vessel to another in the month of January or March, unless in the decline of the moon, under penalty of seeing it spoiled.

Toaldo has not favored us with any physical reason for this maxim; but it is remarkable that Pliny, on the authority of Hyginus, recommends precisely the opposite course. We may presume that, from such contrary rules, it may reasonably be inferred that the moon has no influence in this case.

Among the maxims of Pliny we find that grapes should be dried by night at new moon, and byday at full moon.

When the moon is new it is below the horizon during the night, and above it during the day, and when it is full it is above the horizon during the night, and below it during the day. The maxim of Pliny, therefore, is equivalent to a condition requiring that the grapes should be dried when the moon is below the horizon. It is evident that the absence of the moon is not required in this case, in consequence of any effect which her light might produce if she were present; for when the moon is new she affords no light, even when in the firmament, the illuminated side being turned from the earth. If the maxim be founded upon any reason, it must, therefore, either be on some influence which the moon is supposed to produce when present, independent of her light (the absence of which influence is desired,) or it may be that she may be supposed to transmit some effect through the solid mass of the earth, when on the other side of it, which she is incapable of producing without its intervention. The maxim is probably as absurd and groundless as the other effects imputed to the moon.

Supposed Lunar Influence on Putrefaction. — Pliny and Plutarch have transmitted it as a maxim, that the light of the moon facilitates the putrefaction of of animal substances, and covers them with moisture. The same opinion prevails in the West Indies and in South America. An impression is prevalent, also, that certain kinds of fruit exposed to moonlight lose their flavor and become soft and flabby; and that if a wounded mule be exposed to the light of the moon during the night, the wound will become irritated, and frequently become incurable.

Such effects, if real, may be explained upon the same principles as those by which we have already explained the effects imputed to the red moon. Animal substances exposed to a clear sky at night, are liable to receive a deposition of dew, which humidity has a tendency to accelerate putrefaction. But this effect will be produced if the sky be clear, whether the moon be above the horizon or not. The moon, therefore, in this case, is a witness and not an agent; and we must acquit her of the misdeeds imputed to her.

THE ENEMIES OF BEES.

The moth, or universal enemy of the bee, is the only enemy that we need fear in this country. The warp and the king-bird sometimes make havoc among them, but every enemy sinks into insignificance when compared with the wax-moth. Its first appearance is in May or June. It is of a grey or whitish color, similar to the millers that flit around the blaze of a candle, though not so large. It remains inactive during the day, but as soon as twilight sets in, it sallies forth from its hiding-places, and seeks out the weakest stock or swarms of bees for its operations. Having gained an entrance, it winds its way up the side of the hive that is the least protected, and having gained the summit or a secure location, some distance from the bottom of the hive, it there deposits its eggs upon the surface of the comb, which, in a few days, are hatched out by the internal heat generated by the bees, and become white worms or caterpillars. They at once commence weaving around themselves a white silken substance, as a protection against the bees. They then commence cutting away the combs and building galleries for their own use, from which they put forth their heads for food in every direction. Their heads are covered with a helmet impenetrable to the sting of a bee. When the bees perceive these insects thus at work, they commence cementing them in, and confining them to their original location, and consigning them to starvation, which is easily done, if there are but few of them, but in cases of weak stocks, with constant lodgments of the moth, they are soon undermined, and giving up in despair, they either leave the hive, or dwindle away in inactivity. The

symptoms of the depredations of the moth may be known by the falling of particles of comb upon the bottom-board of the hive, of a brown color. By hanging the bottom board of the hives on wires, one can see at once whether his bees are in danger from the moth. The best time to look is in the morning, and if you find a considerable covering of particles of comb, such as the gnawing of worms would be likely to make, and you find this for several mornings in succession, you may believe that the destroyer is at work. When the bees become active and the winds arise during the day, this comb-dust is generally blown away, hence early in the morning is the time to examine, unless the stock is so far undermined as to give evident signs of it at any time. Another sure sign is in the inactivity of the bees. As soon as the moth gets the upper hand, the bees discontinue all operations. Many of them will leave, and join neighboring hives, but a few will remain faithful to the last, and die at their posts.

Every apiarian should be vigilant in looking to his hives in season, that he may at least save the honey, if not the bees, of his mothy hives. If taken in hand in season, he may, perhaps, save his bees, by driving them into a new hive; but if the season is far advanced, the bees would have no time to build new combs, and lay up a new store of honey for winter, consequently, he may save the honey, and disperse the bees among his remaining stock, for there are but few bees generally, under such circumstances, and those few are but little inclined to defend their habitation, consequently the combs can easily be cut out by being properly protected by a bee-dress. But the great object is not to know how to manage after the moth has destroyed the stock, but how to prevent such a result; and to this end I shall now confine myself. Perhaps there is no part of the management of bees, upon which there has been such a diversity of opinion and action, as upon a prevention of the moth. Some have deposited a little salt under the corners of the hives. Others have recommended catching them in basins of sweetened vinegar. Others, again, have trumpeted forth grand discoveries in the formation of hives that prevent the entering of the moth, and more recently some one pretends that a lining of zinc will frighten them away, or, if they should deposit their eggs within the hive, by placing the hives near the ground, they would not hatch out! This is all moonshine. I give the moth every possible facility to enter my hives. I open every side to its ingress, with forty-eight inches of opening to every hive, yet they enter not. My hives are surrounded by scores of them in an evening, yet they stand impregnable. Not all the ingenuity of man can ever invent or prescribe a remedy against the moth, aside from the *ability of the bees to defend themselves*. Here lies the grand secret. A certain management of the bees, whereby they are enabled constantly by the force of physical ability and numbers to even prevent the entrance of the moth. This is the *sine qua non*—the grand desideratum that the world has been so long in search of, the philosophy of which I will give in my next.

T. B. Miner.

Ravenswood, L. I., Oct., 1846.

American Agriculturist.

WINTER CARE OF SHEEP.

As the wool business has become a very important branch of American husbandry, and is competent of being much more so unless destroyed by the suicidal policy of our law makers, we shall give a few brief directions with regard to the "winter management" of sheep. And in what we shall say we wish it distinctly understood that we are only presenting a brief abstract of those rules laid down in that most able work, "*The American Shepherd*," published in 1845, by L. A. Morrell, who is himself one of the most enlightened sheep breeders in the country, and whose book should be in the possession of every agricultor in the country, as without doubt, it combines more true philosophy connected with the rearing management of sheep, and more of those unerring results arising from practical knowledge, than any other volume ever printed.

Necessity of Protection.—There is nothing, says the author, appertaining to sheep economy, more gererally neglected than the provision of ample and warm accommodations for shelter, and from no other cause does such large losses accrue. It is rigidly practised in Prussia, Germany, Scotland and the northern parts of England; and every sheep historian recommends it. So indispensable is it held, that the author of a Scotch work upon the subject, lays down this emphatic rule:—"Shelter is the first thing to be attended to in the (winter) management of sheep," a rule, whose common sense must commend it to the adoption of every sheep owner. While every good shepherd is decidedly hostile to their being confined or to their being forced into shelter, whether they wish it or not, it cannot be too strongly recommended to all farmers, to put the means of avoiding the severity of stormy weather within the reach of the flock at all times. To illustrate the *advantage of shelter*, our author adduces the example of Mr. Spooner's experience, which we will give in his own words. He says:

"Until within the last ten years, the writer's flocks, like thousands of others at the present time shelters; and the loss, in proportion to the severity of winters, varied from five to ten per cent. The diseases caused by their exposure were such as *scab*, *pelt*, *rot*, *dysentery*, and *colds*, which caused an excessive discharge of *mucus* from the nostrils, while many died from no other cause, apparently, than sheer poverty of condition. Since, however, his sheep have been protected, the deaths have not exceeded *one and a half per cent.* in regard to *number*, and if comparative value were the standard, it would not be considered of any moment, as the loss has been mostly among diminutive spring lambs—so from bad nursing, and old ewes which, from superiorisy of fleece or carcase, were retained thus long, to breed from."

Protection materially *increases the weight of the fleece and improves its quality*. The comforts of shelter enables the animal the better to retain its flesh, as also, to receive accessions, and as a consequce, to increase its fleece, as the secretions which produce flesh and the fluids which impart growth to the wool all proceed from the same source. But as facts are more reliable than theory, we will state that the flock of the writer increased in weight of fleece, *by shelter*, from two lbs. five oz. to two lbs. nine oz. to three lbs. two oz., making an aggregate difference in the weight of the wool

of his flock of 2000 pounds. The wool too is greatly improved in softness, as also in the soundness and evenness of fibre, properties which tend much to enhance its value in the market.

The superior condition of the ewes, induced by the comforts of shelter, *materially increases the number of the lambs.*

Shelter saves provender, as animals consume less food when kept in comfortable quarters than when exposed to the inclemency of the weather; under the latter circumstances a large portion of their food, by the law of necessity existent in animal economy, being appropriated to purposes of heat, which under the former condition would have gone to the production of flesh, muscle and fat.

Feeding.—Hay is the standard of sheep-feeding, and it is presumed that sheep which receive daily, per head, three pounds of first quality hay, or its equivalent in that and other food, can be subsisted in a healthful wool and milk producing state. The large long wooled sheep require more food than the small fine wooled ones. While the *former* would require from three to three and one-half pounds of hay, or its equivalent in other food, the *latter* may be subsisted upon two to two and one-half pounds of hay, or its equivalent, per head, the rule being that two and one-half pounds of hay is required to support, daily, every 100 lbs. live weight. The feed of sheep may be varied as follows, and they be benefited by the change of diet, as—

Hay, 3 lbs. per day, for a week,
Hay 1½ lbs., 1 lb. potatoes per day, another week, or
Hay 1 lb., 2 lbs. potatoes per day, for the third week.

These several daily allowances to be divided into three parts and fed out, say, in the morning, at day break, at noon and in the evening, just before sunset. If other vegetables should be substituted for potatoes, as cabbage, turnips, or Swedish turnips, the same weight will answer. If the common white turnips be, it will require double the weight. If beets be substituted, one-third more in weight must be given be given.

If *straw* be substituted for *hay*, it will require thrice the quantity, and it should be chopped and moistened with water, and mixed in with the vegetables.

There are various other articles of food named in the tables, but as they are not grown in this country we have omitted naming them. *Oat* and *barley* straw are preferred to those of wheat and rye.

The *stalk* of *Indian corn*, cut fine, is very nutricious food for sheep—so also are corn-cobs, ground find and moistened.

Beans ground into meal, and mixed with chopt hay or straw, in the following proportions, make an excellent wool-producing provender. One-half lb. bean meal, two lbs. hay—or one-half lb. bean meal and three lbs. straw.

Buckwheat straw, when carefully cured, is recommended for sheep—so also is *millet hay.*

If *barley*, or *oats*, be fed to sheep, a half pint of either grain may be substituted for one pound of hay—but each of these grains should be chopt and moistened and mixed with cut hay or straw as the case may be.

What food will produce the most wool?—Peas and *beans*, corresponding more with the elements of fat than the various grains, are better adapted to the production of wool, than either wheat, corn, rye, barley, oats or buckwheat. These latter, together with the Ruta Baga turnip being peculiarly adapted to the production of fat, should be used mostly for the feed of sheep when undergoing the process of fattening.

Overfeeding should not be resorted to, as it deteriorates the quality of the wool—the best, finest and softest wool is always produced where the sheep is kept in a healthy condition, fed regularly at stated hours, but not in excess.

The *quality of hay* is an object. If *coarse*, much of it will be rejected by sheep, say to the extent of from ten to twenty-five per cent.; so therefore, to obviate the necessity of making allowance for such loss, care should be taken to provide hay of a *fine* quality. *Twenty tons* of good hay would carry 100 head of sheep through the winter in excellent health and condition.

Importance of Green Food.—The feeding of green food, such as *potatoes, apples, turnips, &c.*, are deemed essential to the health of the sheep. Confinement wholly to dry food does not comport with that variety of condiment, which has so frequently been urged; and consequently is followed by the disorganization of the digestive functions, producing *costieness* and the disease called the *stretches. Pine bows* should once a week be given them. Besides preventing the occurrence of costiveness and the stretches, green food tends to increase the wool and yolk secretions, and to impart elasticity, soundness and softness to the fleece, maintains the sheep in health, improves his condition, and augments the quantity of wool.

Water necessary.—To enable the sheep to provide himself with *saliva* to assist him in the process of ruminating he should be daily allowed water to drink.

Management of Lambs.—At the beginning of this month, the lambs should receive a portion of of some kind, daily, say, in the proportion of a peck to 100 head; about the middle of the month this quantity may be increased to one-half a bushel. To induce them to eat potatoes, the meal should be sprinkled over them. Half a bushel of potatoes given twice a week will be about the right quantity, which must in addition to the meal, receive a sprinkling of salt. The messes must be understood to be in addition to thetr allowance of hay.

Management of two year olds.—Sheep of this age require as much food as the matured ones, and should receive similar attention.

Management of Breeding Ewes.—The course of management will depend on the *time of yeaning.*—At least a month before this period is to arrive, they should receive liberal allowances, daily, of potatoes, for the assimulation of milk; to the potatoes a little wheaten shorts mixed with a little barley, or oat-meal should be added.

Mode of Foddering.—All hay and long fodder should be fed from racks.

Salting.—Sheep should have salt given them at least thrice a week. Indeed, if they had daily access to it in a trough under cover, it would be better. And where pine bows are not to be had conveniently, a mixture of tar and salt should be placed in a trough.—*American Farmer.*

Mr. Ebenezer Tisdale, of Lebanon, Connecticut, commenced the scythe business about the year 1735. From Boston one of his scythes was sent to England as remarkable for the manner in which

he turned the back. The scythes afterwards imported from England were made in the same style

For about forty years he pursued this business, making annually about 400 scythes. Such was his judgment in tempering edge tools, that he had orders from all parts of the country for articles of cutlery. His stamp was a sufficient recommendation for any mechanical instrument, in New York, Boston, and Albany.

At the age of eighty-nine he made, and in a neat and beautiful style finished, a carving knife and fork. To no person was the country, at the time, more indebted for a knowedge of his important art. A native of an obscure village, and having served merely an apprenticeship to a common blacksmith, whose business was almost wholly confined to shoeing horses, and such like work, Mr. Tisdale rose by his own efforts, to unparalleled eminence in his trade.

He was first cousin to Dr. Franklin. Industrious, temperate and hopefully pious, he lived to the advanced age of nearly *one hundred years*.

"Honor and shame from no condition rise ;
Act well your part, there all the honor lies."

[*Providence Journal.*

CURING HAY.

On the eighty-seventh page of the last number of the Cabinet is a statement of expedition in collecting and storing hay, and an opinion given in respect to the condition of that hay, which, should it be the means of inducing the general adoption of such a practice, would be productive of great loss.

The relative value of labor and hay, and the risk of sustaining damage from rain, and incurring additional expense, has led to the general practice of hurrying it in, in such a condition that much of its value leaves it in the mow. In a practice of more than thirty years, I have seen but two instances in which such was not the case — they were under circumstances of unusually long-continued drouth.

The quantity of salt said to be used, though much too small to produce the effect ascribed to it, was too great for the benefit of the cattle.

The statement that it contained, when put in the mow, "all the nutritious qualities required to form flesh, bone, muscle, and to promote the growth of the animal to be fed on it," is admitted; but that it will remain so, the laws governing organized matter, will not allow me to admit; and had the operator taken quantities of the grass cut on second day — but one parcel in the centre of his mow, and exposed the other in a proper manner to the influence of sun and air, even till seventh day, and weighed the two next winter, he would have found that the grass, put by to be dried by the heat produced by the decomposition of its own substance, had lost the most in weight; had he then fed the two parcels under circumstances that would have enabled him to test their relative value for supporting the strength and maintaining or increasing the weight or produce of the animal, he would have found that it had lost even much more in value than it had in weight.

Why this must be the result I will endeavor to explain. All substances capable of sustaining animal life are combinations of three or four simple elements united, not in the manner or order of their natural or inorganic affinities, but as they have been induced to unite by the vital force, and can only be maintained by preserving them from the influence of disturbing causes. Such a cause are moisture and heat — where they are present new arrangements less complex will be formed, and, unless moisture or temperature fail, the organic arrangment will be utterly destroyed, and the most nutritious compound will be converted into water, carbonic acid, and ammonia.

So far as the support of respiration and the maintainance of animal heat are concerned, the value of any substance adapted to animal subsistence, is represented by its capacity to unite with the oxygen; in a mow of hay, the capacity to unite with oxygen is reduced in proportion to the amount of heat generated, including that which is sensible and that which is rendered insensible, by uniting with the water to convert it to vapor. Nor is this the worst effect produced. As nitrogen is weak in all its affinities, the substances containing nitrogen — and such only are capable of forming flesh or repairing the waste occasioned by exertion — are more easily disturbed than those that do not. Decomposition commences on them — they are therefore more reduced in quantity than those that support respiration and maintain animal heat.

As the heat given out by the union of oxygen with organic substances when reduced to their natural affinities, is a fixed quantity, whether that result be effected by fermentation or combustion, we shall not be far astray when we adopt it as a conclusion governing our proceedings, that it will be requisite to feed with hay that has been heated in the mow, as much grain, as being burned, would have produced the same amount of heat, to produce the same result that the hay alone would have done, had it been made so dry that it would not have heated.

There are probably few agriculturists who have not noticed the difference in the result of feeding hay and the grass of which the hay was made; yet there are many who would contend that hay is not injured, but rather benefitted, by a considerable degree of heat in the mow. To me it would appear as rational to contend that water, carbonic acid, and ammonia, passing into the air, can sustain an animal as well as caseine, fibrine, albumen, gum, sugar, starch, passing into the stomach.—*Far. Cabinet.* E. G. Passmore.

ON THE USE AND PROPERTIES OF WOOD ASHES.

According to the analyses of Dr. Sprengel, 100 parts of the ash of oak contain:

Silica,	28.95
Oxide of Iron, Alumina, and Manganese,	8.14
Lime,	16.38
Magnesia,	1.44
Potash,	16.20
Soda,	6.73
Sulphuric acid,	3.36
Phosphoric acid,	1.92
Chlorine,	2.41
Carbonic acid,	14,47
	100.00

On examining the above table the reader will find that oak, and the same is true of other hard wood, contains all the mineral elements found in

any plant grown in this latitude. By way of comparison, we give the constituents of the ash of wheat, both straw and seed, according to the analpses of Boussingault:

	Straw.	Wheat.
Silica, - - -	67.6	1.3
Lime, - - -	8.5	2.9
Potash, - - -	9.2	29.5
Magnesia, - - -	5.	15.9
Chlorine, - - -	6.	traces
Soda, - - -	.3	traces
Phosphoric acid, -	3.1	47.
Sulphuric acid, - -	1.	1.
Carbonic acid, - -	0.	0.
Iron and Manganese, -	1.	1.4
Charcoal and loss, -	3.7	1.
	100.0	100.0

It is particularly worthy of note that. while 100 lbs. of oak ash contain a fraction less than 2 lbs. of phosphoric acid, a like weight of the ash of wheat has 47 lbs. of this valuable acid. Conceding that 100 lbs. of ordinary hard-wood ashes will yield 2 lbs. of phosphoric acid, how many pounds of dry ashes must be applied to an aker, to give a crop of wheat, both straw and grain, equal to 30 bushels, and supply it with all the phosphorus it needs? Mark well the solution of this problem.

Thirty bushels of wheat at 60 lbs. per bushel will weigh 1800 lbs. In 100 lbs. of this there are usually 2½ lbs. of ash having, as above stated, 47 per cent. of phosphoric acid in its composition. At this rate, 1800 lbs. of wheat will contain 40½ lbs. of ash, in which there will be 18 lbs. and a small fraction of the acid above named. To one pound of wheat there is usually 2½ lbs. of straw. (The relative proportion of wheat and straw varies exceedingly, as every wheat-grower knows. Nor is the quantity of ash left in wheat straw when burned always the same. It varies from 3 to 16 per cent. of the weight of dry straw. The average is not far from 7 per cent.) To produce 30 bushels of wheat one must have on an average 4,500 lbs. of straw, containing 315 lbs. of combustible minerals, which if the straw is burned will be left in the form of ash. As 3.1 per cent. of this ash is phosphoric acid, 315 lbs. will contain 9.76 lbs. From these figures it is seen that the ash of wheat and straw together contain 27.76 lbs. of phosphoric acid. To furnish this amount by applying wood ashes that have only 2 lbs. in 100, the husbandman must spread 1400 lbs.—about 20 bushels of ashes on an aker. It is particularly worthy of note that, 4,500 lbs. of wheat straw contain only one half as much phosphoric acid as 1800 lbs. of wheat. As a matter of economy, instead of applying 1400 lbs. of ashes to an aker, where we wish to harvest 30 bushels of wheat, 100 lbs. of bones can be boiled to a coarse powder in strong lye, and mixed with ten bushels of ashes to be used for the same purpose. This is a most valuable compound to aid in forming the seeds of all cultivated plants.

When a wheat-field is covered with a light snow, so that a team may go over it without injury, ashes may be evenly spread from a sled box, at any rate per aker which their cost, and the circumstances of the case may require. To all spring crops they may be applied broad-cast, or in the hill at the time of seeding. Care is necessary to mix caustic ashes with the earth, to prevent injury to the young and tender plants, when they first start. By carelessness in this regard, we have injured them.

We are greatly in favor of a compound made by the union of ten bushels of ashes, five of gypsum, and three of common salt, to which we add ten of lime, did not our soil abound in that mineral. This compound has all the purely earthy elements that exist in all crops. It may be regarded as an universal fertilizer, applicable to all soils. Its quality, however, will be much improved, by adding to it one or two hundred pounds of bones boiled to powder in strong lye.

We met several farmers at the State Fair recently held at Auburn, who have used the above compound on our recommendation, and they expressed the highest satisfaction at the result. If used broad-cast, there is no danger of putting on too much—for ten bushels of ashes, ten of lime, five of gypsum, and three of salt, may be spread on an aker, if not a fourth of it, without injury, except waste of material. Our motto for feeding plants is: "Give them just what they need, and that, *little and often.*"

We have satisfied ourself that it is bad economy to apply to any farm-soil a large amount of manure of any kind *at once*. In all cases a great waste of soluble ingredients is inevitable. Dissolve common salt or other mineral in water, pour it on the ground, and wherever the water runs, the dissolved salt goes with it. The more soluble the fertilizer, the more sparingly should it be applied at any one time, and the oftener the application should be renewed. *Water* itself is a powerful fertilizer as everybody knows. How great the advantage of having this important element in all plants frequently applied in gentle showers—in moderate doses! Be wise, and add to the dews and rains of heaven, such other elements as Nature uses in forming all your crops—carefully saving all these elements by strict economy, and using them to the very best advantage. If lime and gypsum are high in price at your residence, add only five of lime and two and a half of gypsum to ten bushels of ashes when you apply the latter to your wheat, corn, or potato crop.—*Gen. Farm.*

CAUSE OF AND CURE FOR HARD TIMES.

BY AN OLD FARMER OF 1788.

I profess myself to be an honest farmer, for I can say that no man can charge me with a dishonest action. I see with great grief, that all the country is afflicted as well as myself. Every one is complaining, and telling his grievances, but I find they do not tell how their troubles came on them. I know it is common for people to throw the blame of their own misdeeds on others, or at least to excuse themselves of the charge. I am in great tribulation; but to keep up the character of an honest man, I cannot in conscience say that any one has brought my troubles on but myself. "Hard times—no money!" says every one. A short story of myself will show how it came to be hard times with me, and no money at the age of sixty-five, who had lived well these forty years.

My parents were poor, and they put me at twelve years of age to a farmer, with whom I lived till I was twenty-one. My master fitted me with two stout suits of homespun, and four pair of shoes. At twenty-one I married me a wife, a ve-

ry good young woman she was. We took a farm of forty akers on rent. By industry we gained fast. I paid my rent punctually and laid by money. In ten years I was able to buy myself a farm of sixty akers, on which I became my own tenant. I then in a manner grew rich, and soon added another sixty akers, with which I was contented. My estate increased beyond all account. I bought several akers of out-land for my children, which amounted to seven when I was forty-five years of age.

About this time I married my eldest daughter to a clever young man, to whom I gave 100 akers of land. This daughter had been a working, a dutiful girl, and therefore I fitted her out well, and to her mind exactly; for I told her to take of the best of my wool and flax, and to spin herself gowns, coats, stockings, &c.; nay, I suffered her to buy some cotton to make into sheets; I was determined to do well by her.

At this time my farm gave me and my whole family support on the product of it, and left me one year with another, one hundred and fifty dollars, which was for salt, nails, &c. Nothing to wear, eat, or drink, was purchased any where, as my farm provided all. With this saving, I put my money to interest, bought cattle, fattened them, and made great profit.

In two years after my second daughter was courted. My wife says, "come, you are now rich; you know Molly had nothing but what she spun, and no clothing has ever come into our house for any of us, she must be fitted out a little; she ought to fare as well as neighbor.B's Betty." "Well, wife, it shall be as you think best, I have never been stingy, but it seems to me that what we spin would do." However, wife goes to town in a few days, and returns with a calico gown, a calimanco petticoat, a set of stone tea-cups, and half a dozen pewter spoons, things that were never seen in my house before. They cost but little—did not feel it—and I confess I was pleased to see them. Sally was as well fitted out as any girl in the parish.

In three years after my third daughter had a spark, and a wedding concluded upon. Wife again comes for the purse; but when she returned what did I see? A silk gown, silk for a hat, looking-glass, China tea gear, &c., and a hundred other things, with the empty purse. Then followed jealousy and quarrels. Molly ought to be outfitted as well as Betty. Good homespun and cotton fixtures were ruled as vulgar, and white feathers and silk must take their places; Sal's husband must speculate in stocks, backed endorsement; but *he* had all the fun of speculating, and I had all the misery of *paying*. Then grandpa must be the treasury department for all things needful. Nothing was heard but arrangements for journeys, balls, parties, and such like.

In about a year, Bet's husband made a mistake, and signed somebody else's name to a check instead of his own. He was arrested and sent to jail, and I had to send half of my earnings to get him out. Sal's husband died, leaving a legacy of nine children, whom, with their mother, I've got to support. Bet's elder boy was framed for a doctor; took his degree, and sent his first six patients out of the world by improper treatment, for which he had to fly the land, leaving his dear incumbrances *attaches* on my purse.

I could fill your paper with further particulars, but that might not be so agreeable to your readers. I will only say, in regard to hard times, let every man exercise the ability nature has given, in his prescribed sphere; let contentment reign within the breast, no envy reach its threshhold. Regard not the apparent glitter of thy neighbor, nor aim at an equality beyond your comprehension; live more to please yourself, and less to please other people; be frugal, industrious and just; bring your ideas down to a level, nor let them be disturbed by bad example. So shall you avoid the mishaps I have experienced in family matters, and rejoice in old age over a life well spent, with just hopes for years hereafter.

PRODUCTS PER AKER.

It is worthy of remark that the product per aker of the principal grains and seeds is much less in the United States than in England and Germany. The report of the Commissioner of Patents contains an interesting table on the subject, from which we make the following extract, showing the average produce per aker of wheat, rye, barley, &c.

	Germany.	England.	U. States.
Wheat,	25 bush.	28	18
Rye,	25 "	25	15
Barley,	35 "	36	25
Oats,	40 "	32	36
Peas,	26 "	30 to 40	25
Corn,	36 "		30
Turneps,	30 to 35 tons	30 to 35	20
Buckwheat,	27 bush.	26	15 to 30
Flax,	10 " seed,	10	8 to 12
Hemp,	650 lbs.	550	500
Potatoes,	300 bbls.	250	175

In every instance the product is smaller in the United States. The reason of this is apparent.—In England and France, the population is dense, land costly, and the most rigid economy necessary to subsistence. Hence not one inch of ground is neglected, and the most approved modes of cultivation are adopted.

In Germany and England the quantity of seed sown per aker is much larger, generally, than in this country. We quote from the table referred to above, the following:—

SEED PER AKER.

	Germany.	England.	U. States
Wheat,	2½ bush.	2½ to 3½	1 to 1½
Rye,	2 "	2 to 2½	1 to 1½
Barley,	2½ "	2½ to 4	2½ to 2
Oats,	2 to 4 "	3 to 4	2 to 3
Peas,	2½ "	3 to 3½	2 to 2½
Corn,	20 qts.	———	20 to 30
Turneps,	———	1 to 1 pts.	1 to 2 lbs.
B. Wheat,	1 bush.	1 to 2½ bus.	16 to 29 qts
Clover,	14 lbs.	14 to 18 lbs.	5 to 10 lbs
Flax,	2 to 3 bus.	2 to 3	1 to 1½
Hemp,	2½ to 3 "	3	1½ to 1½
Potatoes,	5 "	8 to 12	8 to 20

Rochester Daily Advertiser.

DEAD ANIMALS.

Animal matter contains every element that is necessary to grow every plant known. In it are phosphate and carbonate of lime, ammonia, Carbon, in short, in the best form, all the essentials of vegetable growth. Whenever a fowl, cat, dog,

sheep, pig, horse, or cow dies, let the carcase be cut up, and added to the manure heap. The carcase of a single horse will turn loads of useless muck or peat into manure, richer than any ordinary barn-yard dung. Why then suffer it to decay uselessly and annoyingly? It is true it is not lost, for the gases that taint the air are appropriated by plants; but the farmer who owned the animal gets but a small portion of what should be all his own. Why will he waste the *dead* energies of the horse, when he has lost the living ones?

If our readers will heed what we say, they will not suffer dead animals to annoy the eye and disgust the nose hereafter. Bury them in the manure heap; add some quick lime to hasten decay, and charcoal dust or plaster to absorb the gases, and much would be gained in the good appearance of the farm and in the quality of the manure. If your neighbor be so improvident as to waste a dead animal, beg it of him, that it may not be detrimental to health and useless to vegetation. Laws should be passed to compel the saving of this most powerful of fertilizers, when common sense and decency fail to do it.

Whenever it is desirable to hasten decay, and rapidly turn animal matter into manure, sulphuric acid may be used. This would be too expensive (although the acid is cheap) for farm purposes, but may be employed for the garden, where expense is not so important. It is frequently desirable to have a rich manure in the garden, and it is not at hand. Animal matter put into sulphuric acid will in a few hours furnish it. Every house will furnish much refuse animal matter. To this, rats, mice, feathers, hair, bones, horns, &c., may be added. If the garbage of a slaughter-house can be got, it should be. All these will son be reduced to an available state, be inoffensive, and add great fertility to the soil where used. The requisite quantity of acid may be ascertained by experiment—about ten or fifteen pounds is usually allowed for 100 pounds of animal matter.

American Agriculturist.

PEAT CHARCOAL.

Sir: My attention having been drawn to a paragraph in a recent number of your publication, which states that "Professor Leibig has discovered that soot is a perfect antidote to the potato disease." I conceive it but right, under the existing circumstances of the evil, which, permit me to say, I pointed out the certainty of to the government of this country in September last, to state that several months since I laid before the leading authorities, both government and otherwise, of this country and England, facts incontrovertible, showing the action and properties of charcoal or carbon upon the disease of the potato, both as a preservative in pit or store, and as a manure for the healthful re-production of the tuber. My papers written upon that subject were the result of many year's experience and practice, as regards the potato, both in its production, storage, &c., they pointed out in the fullest manner the fact which Professor Liebig now publicly verifies, namely, that carbon is the only antidote to the disease.

I cannot but feel proud that I am thus upheld by an authority so truly eminent; but I regret that so long a period has been allowed to elapse without the promulgation of facts such as this, so deeply affecting all classes of the community.

Under existing circumstrnces, I do not feel it right to enter into the minutia set out in my papers alluded to, detailing the causes and the effect of the action of charcoal on the disease of the potato. But I should be culpable, indeed, if I held one moment the two following facts; for they deeply concern some millions of the poor; and, without hesitation, I challenge proof to reverse what I state.

The diseased potato may be almost entirely preserved from the effect of decomposition, by pulverised peat or wood charcoal; abundantly interposing it between the layers and in the interstices in piting or storing, the pit or store being of course properly ventilated.

The action is thus: the charcoal absorbs the superabundant moisture, the attendant of the disease, and instantly corrects the putrescent matter which it largely contains; therefore, effectually protecting the whole from infection or contagion, or the evil action of heated moisture.

As a manure for the potato the action of charcoal when properly applied, is as follows: It absorbs from the seed (which under existing circumstances, must be more or less diseased, no matter how attended to, or where procured in Europe,) that over-moisture already named; and instantly correcting all putrescence, it leaves the soil uncontaminated to act with purity upon the growth, yielding to the plant abundantly that of which disease has robbed it, carbon, and thus supplying a nutriment which constitutional weakness, (its real malady,) essentially requires.

These are the main causes and effects of charcoal upon this disease; and knowing them to be incontestible, I should feel unjustified in longer withholding their publicity, the more particularly as Professor Liebig has now, it appears, stamped the facts with his high authority, which, so long since, have been proved by so humble an individual as myself.

It is but right to add, that peat charcoal can be had to any extent from the bogs of Ireland, at a cost of no consideration; and that its value as a manure generally will be found of the highest consideration.

J. W. Rogers, C. E.

[*Mark Lane Express.*]

Management of Poultry—*By Sarah Dakin.—Hens.*—1. Provide a warm dry shelter for winter.

2. Feed with oats, soaked for twelve hours in warm water before feeding.

3. Burn clamshells and pound them fine, let them have as many as they can eat, and you may have eggs from January to December.

From thirty hens I have gathered this year 3,522 eggs by the 10th of September, and raised 200 chickens.

I manage my chickens by feeding oats and rye ground, two bushels of oats to one of rye. Keep them in a warm shelter at night.

N. B. To prevent the pip or gapes, change the male every year, and your chickens will be healthy.

Management of Turkeys.—1. Feed the same as hens, and let them hatch their young ones any time after the 20th of May.

2. Feed the young ones oats and rye ground, wet with milk curd, and occasionally sprinkle a

little powdered clam-shell lime with the feed; if cold and wet weather, sprinkle a little black pepper with their food.

3. Make warm and dry shelters for them to brood in nights, and keep them from the wet and dew until the sun shines warm.

4. Feed but little the first twenty-four hours after they are hatched; by this management I can raise nine out of ten.

Besure and change the tom turkey every year.

Raising Goslings.—1. Have them hatch as early as the 1st of May if possible. Make dry, warm places for their nests.

2. Feed the young goslings with corn meal, put one teaspoonful of salt in a pint of meal, wet the feed with milk.

3. Let them have access to water in pleasant weather.

4. Keep them at night in a warm dry shelter.

By this management I can raise forty-nine out of fifty.

Ducks.—Feed ducks the same as goslings. In this way I have raised fifty-two young ones from two old ducks in one year.—*Poukeepsie Tell.*

Seeding with Clover.—It may not be known to all farmers, who raise their own clover-seed, that the straw after threshing, contains enough seed to give a thick seeding to the land, if spread over the surface. Dr. Cook, of Sodus Point, N. Y. pursues this practice very successfully. He spreads a thin coat of the straw over the ground as soon as it is harrowed, which does not injure, but rather benefits the grain, as it comes up thro' the straw, which afterwards decays. The seed vegetates well, and affords a very thick growth of clover, or to use the Doctor's own words, "as thick as the hair on a dog's back."

Salt for Mildew.—Grapes have been much injured in this vicinity for several seasons past by the mildew. Sulphur has been profusely used without any beneficial effect; and the best remedy that has been applied as yet, is a weak solution of salt. Those who have tried it with caution, have met with almost entire success. It should be carefully used, or the remedy will be as fatal as the disease. The quantity of salt should be barely *sufficient to be tasted* in the water in which it is dissolved. The solution is applied by a syringe, over the fruit and foliage, as frequently as there is the least appearance of the disease.

A correspondent of yours speaks of using salt hay to prevent mildew upon the gooseberry. In this section of the State, the gooseberry is so much injured by this disease, whatever pains may have been taken to guard against it, that it is but little cultivated for the table; but in Newport and its vicinity, it is raised without any care in perfection. That place, as you well know, is much exposed to the winds from the ocean, and fogs are of very frequent occurrence. We have often heard it stated that grapes cultivated near the sea, are more free from the disease than elsewhere.

We are inclined to believe that salt properly applied, may be a specific for the disease. Spread upon the soil it may not produce any beneficial effect, unless used in such quantity and so often as to endanger the life of the plant. Heat and moisture operating upon salt hay, gradually causing its decomposition, gives to the salt a continued and durable operation, protecting the plant from the dangers of injury to which it is constantly liable. It may act "as a stimulant," or "a shield to protect the roots," but we believe that syringing the fruit and foliage repeatedly with a weak solution of salt and water, would produce as much. We intend to try this experiment, whether salt hay may not act equally as well, when the roots are entirely protected from its operation.

L. C. E. Providence, Aug. 25.

Horticulturist.

An Example for the Young.—The N. Haven Palladium states that among the graduates at Yale College on Friday, was one whose history presents one of those remarkable instances of perseverance under great discouragements, which are now and then met with at every college, though very rarely attended by circumstances of such striking interest as the present. The individual referred to entered the college three years since, and is said to have made his way to it, from a distance of above one hundred miles, on foot, and to have entered on his collegiate course with the sum of just three dollars on hand! He has by his unaided efforts sustained himself to the end of that course, and came off yesterday with distinguished honor. But what is extraordinary in his case is, that he has also found time (while many of his more favored comrades having been wasting their precious hours in city amusements and college inanities) for cultivating his favorite branch of Electricity, and pushing his mathematical studies beyond the limits of the prescribed college course. As evidence of his promise in severe science, it may be stated that an elaborate paper *on the law of electrical conduction in metals* was published by him in the March number of Dr. Sillman's Journal of Science, which for experimental, mathematical and logical merit, is surpassed by nothing in that department of science which has ever appeared in that work, and which has already elicited from Sir Michel Faraday, the prince of philosophers in Electricity, a compliment of which either of our eminent countrymen, Prof Morse or Dr. Henry might well be proud. Would it not be a good theme for a commencement exercise, to enquire why is it so, that the needy, self-supported student, so often carries off the prize of high success, while the lad carefully nurtured at the primary school, and followed through the college course by an affluence of means, wholly falls in the race, or at most attains a feeble mediocrity?

A Money Digger.—An inquisitive Yankee, seeing a laborer employed in digging in a retired spot, inquired what he was digging for? "I am digging for money!" was the reply. The fact, of course, was truly and promptly heralded to the curious in such matters and the money digger was visited by three or four credulous fellows, when the following dialogue ensued:—

Visiters. We are told that you are digging for money?

Laborer. Well I ain't digging for anything else, and if you are wise you had better take hold also.

Visiters. Have you had any luck?

Laborer. First rate luck. It pays well.

No sooner said than done; the four fellows thanking the generous delver for giving them an invitation to share in his golden prospects, off coats and went to work in good earnest, throwing out many loads of earth, till at length, getting very tired, the following colloquy took place:

Visiters. When did you get any money last?

Laborer. Saturday night.

Visiters. How much?

Laborer. Four dollars and a half.

Visiters. That's rather small business.

Laborer. It's pretty well; six shillings a day is the "regular price for digging cellars, all over town."

The visiting loafers dropped spades and vanished, quite put out with the man who dug money at the rate of six shillings a day!

THE WAY TO BECOME RICH.

The industry and thrift of the people of New England are proverbial, and they thrive and prosper where those of more indolent habits can barely exist. We find in the Bangor Courrier the following article, showing how carefully and admirably every season of the year is turned to the best account. In what other quarter of the Union is it that the toiling farmer or fisherman of the summer converts himself in winter into a successful handicraftsman?

The productive industry of Massachusetts is a marvel to many people, and of course leads to frequent inquiries how it happens. A few facts recently brought before the public serve in some measure to throw light upon the subject, and what is better still, suggest a means of improvement to very many people in Maine.

In Essex county in Massachusetts it is ascertained that nearly every farmer and every fisherman is a manufacturer also. Those mechanics too whose regular work is in whole or part suspended in the winter have what may be called two trades.

The farmer in Essex county and his whole family delight in engaging in manufactures. He has, if nothing else, his shoemaker's shop, where he and his sons work in the winter and stormy weather. His wife and daughters do their part in binding shoes or brading straw or making palm leaf hats, or in the manufacture of some articles for the market. The fishermen too have their trades at which they work in the winter. The brick maker and brick layer are often found to be skillful shoemakers or last makers. In this way private industry is made honorable — all keep themselves busy, and thus secure to all an abundance of the comforts of life.

WATER PROOF GLUE.—We give the following different methods of preparing a strong glue or cement, that will withstand heat and moisture, from the *Scientific American*.

1. Melt common glue in the smallest possible quantity of water, and add, by drops, linseed oil that has been rendered dry by having a small quantity of litharge boiled in it; the glue being briskly stirred when the oil is added.

2. Glue will resist water to a considerable extent by being dissolved in skimmed milk.

3. The addition of finely levigated chalk to a solution of common glue in water, strengthens it, and renders it suitable for signs or other work that is exposed to the weather.

4. A glue, or cement, that will hold against fire and water, may be made by mixing and boiling together linseed oil and quicklime. This mixture must be reduced to the consistency of soft putty and then spread on tin plates and dried in the shade where it will dry very hard. This may afterwards be melted like common glue, and must be used while hot.

HAY FOR COWS IN SUMMER.—An observing, intelligent and successful farmer informs us that he is in the practice of feeding his cows with hay in summer, particularly if the season is such as to afford flush pastures. His reasoning is, that a full, rapid, and vigorous growth of grass gives to cattle that feed upon it a desire for something to absorb that excess of juice in their food. Dry hay they devour greedily, and, though in never so small quantitities, evidently with the most beneficial effects. Every farmer must have observed that in dry seasons, horses, cattle, and sheep keep in good condition upon herbage parched and apparently scant, while in wet seasons, in tall pastures, though always full, the process of fattening with them is slow. Dry fodder in such cases is required to give substance and tenacity to the green; and can be profitably used by feeding it to horses and cattle. —*Nashua Telegraph.*.

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TO FARMERS.

THE undersigned offers for sale, at his farm two miles north of New Albany, a full blood Durham Bull; also, a few pair of Berkshires—full blooded. dec 1846 3t R. M. JONES.

TERMS.—*The* FARMER AND GARDENER *is published* SEMI-MONTHLY, *each number containing Sixteen royal octavo pages, at* ONE DOLLAR *per annum per copy;* SEVENTY-FIVE CENTS *per copy for Four and less than Ten copies; and* FIFTY CENTS *for Ten or more copies to the same Post Office. All subscriptions* IN ADVANCE.

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